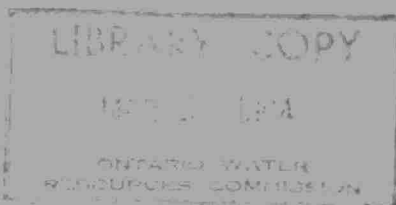




THE
ONTARIO WATER RESOURCES
COMMISSION
REPORT ON
WATER POLLUTION SURVEY
TOWN OF MILTON

OCTOBER 1963



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* Located in envelope inside back cover.

INTRODUCTION

The purpose of this survey was to assess the quality of the water of Oakville Creek (also known as 16 Mile Creek) in the vicinity of the Town of Milton and to review the progress with respect to pollution abatement and control in the municipality.

Similar studies are made routinely and upon request by the Ontario Water Resources Commission as a basis for evaluating any existing or potential sources of pollution. When sources of pollution are revealed, remedial action is recommended.

In difficult situations, the laboratory and research services of the OWRC are available to assist in the determination of a satisfactory remedy.

Investigations with respect to sources of pollution in Milton were made previously by the Ontario Water Resources Commission in February and March 1959, during August and September 1959, and in January 1961.

GENERAL INFORMATION

Milton, with a 1963 assessed population of 5,683, is located on Highway No. 25, south of Highway No. 401. It is centrally located in Halton County, approximately 37 miles south-west of Toronto and 21 miles north of Hamilton.

1. Water Supply

Municipal water for Milton is supplied from two deep wells. The water is pumped into a 50,000 gallon storage tank and a 1,000,000 gallon capacity ground storage reservoir.

Water flows by gravity into the town's distribution system from the reservoirs.

No treatment is provided.

2. Drainage

Milton lies entirely within the Oakville Creek Watershed.

The West Branch of Oakville Creek plus three of its tributaries traverse Milton. These are described briefly as follows: (The tributaries have been designated in this report by letters "A", "B", "C").

(I) WEST BRANCH

The West Branch of Oakville Creek rises on the Niagara Escarpment and enters Milton via the western limits. It flows in an easterly direction, diagonally bisecting the town.

A mill-pond and a mill-race were created in the town downstream from the C.N. railway tracks by diverting water from the West Branch and by the construction of dams. The mill-race was used for developing horsepower until early in 1963 when a section of the local mill was destroyed by fire.

Recently, the main outlet from the pond was sealed and the head- and tail-races were filled in.

(II) WEST BRANCH TRIBUTARY "A"

A watercourse hereafter referred to as Tributary "A" has its source north of the municipality. It travels immediately east of, and approximately parallel to, Highway No. 25 before discharging to the West Branch downstream from Milton.

This stream has little or no dry-weather flow.

(III) WEST BRANCH TRIBUTARY "B"

This is a small local stream which should rather be considered a drainage ditch and it appears to originate on the downstream side of the C.N. railway tracks near P.L. Robertson Manufacturing Company Limited.

Tributary "B" traverses the south-westerly part of Milton enroute to its confluence with the West Branch immediately downstream from the municipality.

The discharge from the P.L. Robertson plant appears to represent most, if not all, of the dry-weather flow in this tributary.

(IV) WEST BRANCH TRIBUTARY "C"

Tributary "C" which has its origin north of Milton discharges to the West Branch immediately upstream from Main Street in the central part of the town.

The dry-weather flow in this stream is greater than in either Tributaries "A" or "B".

Tributary "C" splits into two sections upstream from the C.N. railway tracks and the section with the lesser flow is referred to on the attached plan as Tributary "C" (2).

3. SEWER SYSTEM

(I) Sanitary Sewers

The developed sections of the town, with the exception of the Campbell Avenue area in the south-east corner of Milton, are served with sanitary sewers.

(II) Storm Sewers

Storm sewers are provided for parts of the principal streets with the remainder depending on drainage ditches to receive storm water.

(III) Sewage Pumping Stations

There are four sewage pumping stations in the sewage collection system. With one exception, each of the stations is equipped with two electrically driven pumping units and one gasoline standby engine. One electric pump only is provided at the Fallingbrook Sewage Pumping Station.

The operation of all pumping equipment is automatically controlled.

Each of the pumping stations has by-pass arrangements which discharge during periods of heavy rainfall into either the West Branch of Oakville Creek or its tributaries.

SEWAGE TREATMENT FACILITIES

An activated sludge water pollution control plant consisting of two sections, designated as the "old" and "new" sections, is located near the intersection of Oak and Fulton Streets adjacent to the West Branch of Oakville Creek.

Briefly, the details of the plant are described as follows:

Design Flow - Old Section	-	300,000	USGPD
- New Section	-	400,000	USGPD
- Total	-	700,000	USGPD or
	-	583,000	GPD

Treatment - Screening, aerated grit removal, primary settling, aeration, final settling, two-stage sludge digestion, chlorination (year-round).

Receiving Stream - West Branch of Oakville Creek.

Flow Treatment Data - 1962-63 (November - July)

No. of samples	9
Average daily flow	gal. 623,000
Average B.O.D. reduction	% 90
Average suspended solids removal	% 89

DISCUSSION

While the average performance of the Milton Water Pollution Control Plant has been reasonably good, the suspended solids content of the final effluent was excessive on a number of occasions.

This plant is treating an average daily flow in excess of its design capacity. It is understood that enlargement of the plant is presently under consideration by the council.

ANALYSES OF SAMPLES

The laboratory results of bacteriological examinations and sanitary chemical analysis of samples collected from the West Branch of Oakville Creek, its tributaries, and from sewer outlets discharging a dry-weather flow are presented in Table 1 which is appended to this report.

All of the examinations and analyses were performed at the Ontario Water Resources Commission Laboratory in Toronto.

1. Plan of Milton

A plan of Milton showing the approximate locations of the sampling points and sewer outlets is included at the back of the report.

2. Significance of Laboratory Results

The OWRC objectives for surface waters in Ontario are as follows:

5-day BOD - not greater than 4 ppm.

M.F. Coliform Count - not greater than 2,400 coliforms per 100 ml.

Phenolic equivalents:

Average - not greater than 2 ppb

Maximum - not greater than 5 ppb

pH range - 6.7 to 8.5 . . .

Some pertinent maximum allowable concentrations of contaminants in storm sewer, sewage treatment plant, and industrial waste discharges are listed below. Adequate protection for surface waters should be afforded providing the following concentrations and pH range are not exceeded:

5-day BOD	15 ppm
Suspended Solids	15 ppm
Phenolic Equivalents	20 ppb
Ether Solubles (oil)	15 ppm
pH range	5.5 - 10.6

DISCUSSION

The coliform counts of many of the samples collected from the West Branch of Oakville Creek in the vicinity of Milton were excessive.

The analyses of several samples collected from Tributary "A" indicated pollution in this watercourse.

WATER IMPAIRMENT

Aside from the Milton Water Pollution Control Plant which has been described earlier, the following are potential and existing sources of water pollution in Milton.

1. INDUSTRIAL WASTES

(I) P.L. Robertson Company Limited

This company manufactures an assortment of screens, nuts, bolts, and nails from steel wire. Three waste-producing operations form part of the manufacturing operations, namely, pickling of the steel wire, degreasing of the manufacturing items, and electro-plating.

In all of these steps, rinse waters make up the major portion of the industrial waste flow. The spent sulphuric acid pickling liquor is trucked away for land disposal and the alkaline detergent solution used for degreasing is re-cycled. Only a small bleed-off of this latter solution is wasted. The rinses following zinc, cadmium, copper, chrome, and nickel plating together with the occasional dumping of cleaner baths compose the wastes from the plating room.

The combined waste flows from these three operations discharge to a waste-holding lagoon located on the plant property. Earthen dykes divide the lagoon into four sections which are interconnected in series by submerged culverts. Lime is added manually to the wastes as they enter the first section of the lagoon for neutralization purposes.

There is no direct discharge of wastes from this lagoon to the West Branch of Oakville Creek but seepage through and beneath the dyke walls together with intermittent overflows result in a potentially serious pollution problem. The seepage contains significant concentrations of dissolved iron which has accumulated in the lagoon as a result of the former practice of discharging the spent sulphuric acid pickle liquor to the system. This dissolved iron is precipitated and discolours the waters of Oakville Creek.

The successive dilution that the plating rinse waters receive, combined with the fact that the volume of waste from this source is minimal, prevents these wastes from reaching the creek in a toxic condition. However, it is noted that on one or two occasions in the past when the lagoon was overflowing, small concentrations of cyanide and chrome were detected in samples of the overflow.

The waste disposal methods employed by P.L. Robertson Company Limited could be improved by the installation of automatically controlled neutralization equipment to replace the present method of adding lime manually to the waters. This recommendation has been made to the company in past Commission reports on this industry, but to date has not been acted upon.

Attention is also drawn to the analyses of the sample designated as OWTB - 16.5 (I) which represents flow from a 30-inch diameter sewer which reportedly serves the P.L. Robertson premises and terminates on the east side of the C.N. railway tracks adjacent to the plant.

The quality of the effluent from this sewer as shown by the analyses is unsatisfactory for discharge to a watercourse.

DISCUSSION

The residual amount of iron contained in the lagoon itself will continue to contaminate the seepage that escapes through the dykes. The suggested solutions to this problem are: (1) the sealing off of the dyke walls bordering on the creek, or (2) the dredging of the lagoon itself. As previously noted, the lagoon system is subject to flooding and overflow during the annual spring run-off and this presents another problem with the existing disposal system.

The Industrial Waste Branch of the Commission plans to re-survey this company to determine if further modifications to the existing waste disposal system are possible.

(II) Ontario Steel Products Limited

Ontario Steel Products Limited is engaged in the manufacture of leaf-automobile and railway-car springs from steel bar strips.

The plant employs 340 people and works three shifts per day.

Water consumption averages 86,000 gpd, the major portion of which is used for cooling purposes.

Electro-plating operations here were discontinued three years ago.

Manufacturing operations include the stamping, heat treating, and oil quenching of the component parts of the leaf springs. The only waste of any significance aside from cooling water takes the form of a fine scale that settles out on the bottom of the quenching tanks. This material is periodically removed from the tanks and collected in drums for salvage by a scrap metal dealer. The cooling water is discharged to Oakville Creek via a 36-inch diameter private sewer.

DISCUSSION

The effluent quality of the discharge from the sewer outfall on October 4, 1963, as shown by the analyses of sample designated as OW-16.9 (I) was satisfactory. However, it is noted that wastes high in suspended solids were discharged from this sewer on at least one previous occasion.

2- Storm Sewer Outlets

(I) OW-15-9 (W-2) 22-inch diameter storm sewer - Pine Street.

The flow from this sewer possessed a pungent odour on October 3, 1963. Attention is drawn to the excessive biochemical oxygen demand and solids content of the discharge from this sewer.

DISCUSSION

The cause of the adverse analysis should be determined and remedial action taken.

(II) OW-16.0 (W-4) 18-inch diameter storm sewer- Main Street - N.W. side.

As shown by the analysis of the sample collected on October 4, 1963, the quality of the dry-weather flow from this storm sewer has improved. However, the coliform content of the discharge from this sewer remains excessive.

DISCUSSION

The reason for the high count should be investigated and corrective measures taken.

CONCLUSIONS

The Town of Milton possesses a modern pollution control plant which is treating an average flow in excess of its design capacity. The overload is resulting in lower performance efficiencies than would normally be expected.

Upstream from the Milton Water Pollution Control Plant, the most significant potential and existing sources of pollution are of industrial origin and from storm sewer outfalls.

SUMMARY

During the latter part of 1963, a survey was made to assess the quality of the water of the West Branch of Oakville Creek and its tributaries in the vicinity of the Town of Milton.

A brief description of the sewer outlets examined at the time of the survey together with the laboratory results of the samples collected from the sewer outlets producing a dry-weather flow and from the water-courses traversing Milton are tabulated in Table 1 of this report.

A plan of Milton showing the approximate location of the sampling points and sewer outlets is included inside the back cover of the report.

The Commission was pleased to find that progress had been made by Milton to reduce water pollution within its boundaries.

The following recommendations are made in order to eliminate the remaining sources of pollution originating in the municipality.

RECOMMENDATIONS

1. The enlargement of the Milton Water Pollution Control Plant to meet present and future demands should be given active consideration by council.
2. P.L. Robertson Company Limited should continue to improve its waste treatment facilities to eliminate seepage and overflow of contaminating wastes from the lagoon into Oakville Creek and from the 30-inch diameter sewer into Tributary "B".

3. The cause of the adverse analyses of the samples from the two storm sewers previously designated are OW-15.9 (W-2) and OW-16.0 (W-4) should be ascertained and remedial action taken.

All of which is respectfully submitted.

District Engineer _____

P.G. Cockburn, P. Eng.

Approved by _____

K. H. Sharpe, Director.

Prepared by:

D.P. Caplice
P.J. Walsh

TABLE 1-1

ALL ANALYSES EXCEPT PH REPORTED IN PPM
UNLESS OTHERWISE INDICATED

OUTFALL TABULATION AND ANALYTICAL RESULTS

SAMPLING POINT NO.	LOCATION	DATE EXAMINED	COLIFORMS PER 100 ML		5-DAY	TOTAL	SOLIDS SUSP.	DISS.	TURBIDITY
			I.N.	M.F.	B.O.D.				
<u>OAKVILLE CREEK (16 MILE CREEK) WEST BRANCH</u>									
OW-12.6	OAKVILLE CREEK	AUG. 3/60	-	83	3	-	-	-	15
	(16 MILE CREEK)	DEC. 14/61	-	11,200	3.4	452	-	-	5.0
	WEST BRANCH	JUN. 5/63	-	51,000	2.6	338	-	-	6.0
	AT SIDE ROAD NO. 5 (OAKVILLE)								
<u>WEST BRANCH TRIBUTARY "A"</u>									
OWTA 15.0	OAKVILLE CREEK	AUG. 3/60	-	134,000	11.	-	-	-	49.
	WEST BRANCH	DEC. 14/61	-	41,000	10.	950	-	-	29.
	TRIBUTARY "A"	JUN. 5/63	-	334,000	8.8	974	-	-	24.
	AT SIDE ROAD NO. 10 (OAKVILLE)	NOV. 16/63	-	130,000	7.4	1392	137	1255	-
OWTA 15.5	TRIBUTARY "A" DOWNSTREAM OPPOSITE PARKWAY DRIVE (MILTON)	NOV. 18/63		19,000	3.8	944	34	910	
OWTA 15.6 W	20" ϕ STORM SEWER - ONTARIO SCHOOL FOR THE DEAF (OAKVILLE)	NOV. 18/63		610	6.2	238	18	220	
OWTA 15.7 W	16" ϕ STORM SEWER - ONTARIO SCHOOL FOR THE DEAF (OAKVILLE)	NOV. 18/63		220	5.2	336	28	308	-

TABLE 1 - 2

OUTFALL TABULATION AND ANALYTICAL RESULTS

SAMPLING POINT NO.	LOCATION	DATE EXAMINED	COLIFORMS PER 100 ML		5-DAY B.O.D.	TOTAL	SOLIDS	TURBIDITY
			I.N.	M.F.			SUSP.	
OWTA 15.8 W	12" Ø STORM SEWER - HALTON CENTENNIAL MANOR (MILTON)	NOV. 18/63		810	1.7	306	12	294
OWTA 15.9 W	6" Ø STORM SEWER - HALTON CENTENNIAL MANOR (MILTON)	NOV. 18/63		NO FLOW NOTED				
OWTA 15.9 W-2	12" Ø STORM SEWER - HALTON CENTENNIAL MANOR (MILTON)	NOV. 18/63		NO FLOW NOTED				
OWTA 16.0 W	12" Ø STORM SEWER - MILTON SHOPPING PLAZA (OAKVILLE)	NOV. 18/63		NOT SAMPLED				
OWTA 16.1 W	18" Ø STORM SEWER - MILTON SHOPPING PLAZA (OAKVILLE)	NOV. 18/63		FLOW INSUFFICIENT FOR SAMPLING				
OWTA 16.1 W-2	15" Ø STORM SEWER - GIVEN ROAD (MILTON)	NOV. 18/63		FLOW INSUFFICIENT FOR SAMPLING				
OWTA 16.1 W-3	24" Ø STORM SEWER - MAIN STREET & HWY. NO. 25 (MILTON)	NOV. 18/63		FLOW INSUFFICIENT FOR SAMPLING				

TABLE I - 3

OUTFALL TABULATION AND ANALYTICAL RESULTS

SAMPLING POINT NO.	LOCATION	DATE EXAMINED	COLIFORMS PER 100 ML		5-DAY B.O.D.	TOTAL	SUSP.	DISS.	TURBIDITY
			I.N.	M.F.					
OWTA 16.8	OAKVILLE CREEK WEST BRANCH ⁴ TRIBUTARY "A" AT BASE LINE ROAD (MILTON)	NOV. 18/63		83,000	4.6	262	21	241	-
OWTA 16.8 P	4" Ø PRIVATE SEWER B/A SERVICE STATION (TWP. OF ESQUESING)	NOV. 18/63			FLOW INSUFFICIENT FOR SAMPLING				
OWTA 16.8 W	24" Ø STORM SEWER - HALTON COUNTY ADMINISTRATION BLDG. (TWP. OF ESQUESING)	NOV. 18/63			FLOW INSUFFICIENT FOR SAMPLING				
OAKVILLE CREEK WEST BRANCH									
OW-14.8	OAKVILLE CREEK WEST BRANCH AT SIDE ROAD NO. 10 (OAKVILLE)	AUG. 3/60	-	16,000	2.8	-	-	-	17
		DEC. 14/61		17,900	5.6	454	-	-	12.0
		JUN. 5/63		10,000	2.6	346	-	-	8.5
		OCT. 30/63		470	2.4	462	4	458	-
OWTB 15.7	OAKVILLE CREEK WEST BRANCH TRIBUTARY "B" AT HESLOP ROAD (MILTON)	OCT. 3/63		0	2.3	1470	4	1466	
OWTB 15.7 W	10" Ø STORM SEWER - HESLOP ROAD (MILTON)	OCT. 3/63			NO FLOW NOTED				

TABLE 1- 4
OUTFALL TABULATION AND ANALYTICAL RESULTS

SAMPLING POINT NO.	LOCATION	DATE EXAMINED	COLIFORMS PER 100 ML		5-DAY B.O.D.	TOTAL	SOLIDS	TURBIDITY
			I.N.	M.F.			SUSP.	
OWTB 16.1 W	8" Ø STORM SEWER - ROBERT ST. (MILTON)	OCT. 3/63			NO FLOW NOTED			
OWTB 16.1 W-2	10" Ø STORM SEWER - ROBERT ST. (MILTON)	OCT. 3/63			NO FLOW NOTED			
OWTB 16.1 R	4" Ø RELIEF SEWER - ROBERT ST. SEWAGE PUMPING STATION (S.P.S.) (MILTON)	OCT. 3/63			NO FLOW NOTED			
OWTB 16.1 R-2	4" Ø RELIEF SEWER - ROBERT ST. S.P.S. (MILTON)	OCT. 3/63			NO FLOW NOTED			
OWTB 16.1 W-3	10" Ø STORM SEWER - BELL ST. (MILTON)	OCT. 3/63			NO FLOW NOTED			
OWTB 16.1 W-4	10" Ø STORM SEWER - BELL ST. (MILTON)	OCT. 3/63			NO FLOW NOTED			
OWTB 16.1 P	4" Ø PRIVATE OUTLET - BELL ST. EVIDENTLY LEADING FROM 84 BELL ST. (MILTON)	OCT. 3/63			FLOW INSUFFICIENT FOR SAMPLING EVIDENCE OF PREVIOUS DISCHARGE OF DOMESTIC SEWAGE			

TABLE 1 - 5

OUTFALL TABULATION AND ANALYTICAL RESULTS

SAMPLING POINT NO.	LOCATION	DATE EXAMINED	COLIFORMS PER 100 ML		5-DAY B.O.D.	TOTAL	SUSP.	DISS.	TURBIDITY	PH
			I.N.	M.F.						
OWTB 16.1 W-5	10" Ø STORM SEWER - KING ST. (MILTON)	OCT. 3/63			NO FLOW NOTED					
OWTB 16.3 W	8" Ø STORM SEWER - MAIN ST. S.W. SIDE (MILTON)	OCT. 3/63			NO FLOW NOTED					
OWTB 16.3 W-2	18" Ø STORM SEWER - MAIN ST. (MILTON)	OCT. 3/63			NO FLOW NOTED					
OWTB 16.3 W-3	8" Ø STORM SEWER - MAIN ST. (MILTON)	OCT. 3/63			NO FLOW NOTED					
OWTB 16.4 W	6" Ø STORM SEWER - MILL ST. (MILTON)	OCT. 3/63			NO FLOW NOTED					
OWTB 16.4	TRIBUTARY "B" AT VICTORIA ST. (MILTON)	OCT. 3/63		0	3.2	1282	2	1280		2.5
					ACIDITY AS CaCO ₃			670		
					IRON AS Fe			0.0		
					CYANIDE AS HCN			0		
					CHROMIUM AS CR			8.20		
					ALUMINUM AS AL			10.		

TABLE 1 - 6

OUTFALL TABULATION AND ANALYTICAL RESULTS

SAMPLING POINT NO.	LOCATION	DATE EXAMINED	COLIFORMS PER 100 ML		5-DAY B.O.D.	TOTAL	SOLIDS		TURBIDITY	PH
			I.N.	M.F.			SUSP.	DISS.		
OWTB 16.5 1	30" INDUSTRIAL SEWER P.L. ROBERTSON MFG. CO. LTD.	MAY 12/60	-	-	2.4	886	82	804		3.3
					ACIDITY AS CaCO ₃					
					TOTAL			446.		
					METHYL ORANGE			76.		
					CYANIDE AS HCN			0.9		
					CADMIUM AS Cd			0		
					ALUMINUM AS AL			12		
		SEPT. 8/60		70	3.2	-	-	-	2	7.9
					ALKALINITY AS CaCO ₃			222		
					CYANIDE AS HCN			1.0		
					ALUMINUM AS AL			0.5		
		* APR. 27/62			10.	1072	238	834		7.5
					ALKALINITY AS CaCO ₃			226		
					IRON AS FE			15.4		
					CYANIDE AS HCN			0.0		
					ZINC AS ZN			5.		
					CADMIUM AS Cd			0.3		
		OCT. 3/63		<10	6.0	1232	11	1221		2.7
					ACIDITY AS CaCO ₃			560		
					IRON AS FE			0.0		
					CYANIDE AS HCN			0		
					CHROMIUM AS CR			1.64		
					ALUMINUM AS AL			3.7		

* SAMPLE COLLECTED BY HALTON COUNTY HEALTH UNIT

OUTFALL TABULATION AND ANALYTICAL RESULTS

SAMPLING POINT NO.	LOCATION	DATE EXAMINED	COLIFORMS PER 100 ML		5-DAY B.O.D.	TOTAL	SOLIDS		TURBIDITY	PH
			I.N.	M.F.			SUSP.	DISS.		
OAKVILLE CREEK WEST BRANCH										
OW-15.2 R	10" RELIEF SEWER - FALLINGBROOK SEWAGE PUMPING STATION (MILTON)	SEPT. 13/63	NO FLOW NOTED							
OW-15.6	OAKVILLE CREEK WEST BRANCH DOWNSTREAM FROM MILTON WATER POLLUTION CONTROL PLANT (W.P.C.P.)	OCT. 3/63		62	4.2	494	13	481		
OW-15.7 T	15" Ø OUTFALL SEWER - MILTON W.P.C.P. (MILTON)	MAY 31/61 JUN. 23/61 JUL. 14/61 SEPT. 28/61 DEC. 14/61 MAY 30/62 JUN. 5/63 OCT. 3/63		5,800 <10 4 0 272,000 14,000 50 20	26 2.8 7 8.4 30 15 4.8 10	602 600 540 568 542 590 702 642	34 26 14 38 30 26 • 9	568 574 526 530 512 564 - 633		7.4
OW-15.7 R	10" Ø RELIEF SEWER - MILTON W.P.C.P. (MILTON)	OCT. 3/63	NO FLOW NOTED EVIDENCE OF PREVIOUS DISCHARGE							
OW-15.7	OAKVILLE CREEK WEST BRANCH UPSTREAM FROM MILTON W.P.C.P. (MILTON)	OCT. 3/63		33,000	2.4	436	17	419		
OW-15.7 W	15" Ø STORM SEWER UPSTREAM FROM MILTON W.P.C.P. (MILTON)	SEPT. 13/63	FLOW INSUFFICIENT FOR SAMPLING							

TABLE I - 8

OUTFALL TABULATION AND ANALYTICAL RESULTS

SAMPLING POINT NO.	LOCATION	DATE EXAMINED	COLIFORMS PER 100 ML		5-DAY B.O.D.	TOTAL	SOLIDS		TURBIDITY	PH
			I.N.	M.F.			SUSP.	DISS.		
OW-15.8 R	6" Ø RELIEF SEWER - FULTON ST. SEWAGE PUMPING STATION (S.P.S.) (MILTON)	SEPT. 13/63	NO FLOW NOTED							
OW-15.8 R-2	18" Ø RELIEF SEWER - FULTON ST. S.P.S. (MILTON)	SEPT. 13/63	NO FLOW NOTED							
OW-15.9	OAKVILLE CREEK WEST BRANCH AT PINE ST. (MILTON)	AUG. 3/60		570,000	8.4	-	-	-	18	9.6
		DEC. 14/61		2	3.5	408	-	-	10	
		JUN. 5/63		64,000	1.2	322	-	-	18.0	
		OCT. 3/63		59,000	14.	568	253	315	-	
		ALKALINITY AS CaCO3								
OW-15.9 W	12" Ø STORM SEWER - PINE ST. (MILTON)	SEPT. 13/63	FLOW IN SUFFICIENT FOR SAMPLING							
OW-15.9 W-2	22" Ø STORM SEWER - PINE ST. (MILTON)	AUG. 3/60		900,000	16	486	24	462	10.6	
		SEPT. 8/60		2,140,000	125	510	24	486		
		OCT. 3/63		0	40	1426	72	1354		
		ALKALINITY AS CaCO3								5950
OW-15.9 I	4" Ø BUILDING SEWER - HALTON CREAMERY (MILTON)	SEPT. 13/63	NOT LOCATED							
OW-16.0	OAKVILLE CREEK WEST BRANCH AT MAIN ST. (MILTON)	OCT. 4/63		6,700	3.7	434	13	421		

TABLE 1 - 9

OUTFALL TABULATION AND ANALYTICAL RESULTS

SAMPLING POINT NO.	LOCATION	DATE EXAMINED	COLIFORMS PER 100 ML		5-DAY		SOLIDS		TURBIDITY
			I.N.	M.F.	B.O.D.	TOTAL	SUSP.	DISS.	
OW-16.0 W	18" Ø STORM SEWER - MAIN ST. S.W. SIDE OF BRIDGE (MILTON)	OCT. 4/63	NO FLOW NOTED						
OW-16.0 P	4" Ø BUILDING SEWER - WILSON'S FRIGID LOCKERS (MILTON)	SEPT. 13/63	NO FLOW NOTED						
OW-16.0 W-2	12" Ø STORM SEWER - MAIN ST. W. SIDE (MILTON)	SEPT. 13/63	NO FLOW NOTED						
OW-16.0 W-3	12" Ø STORM SEWER - MAIN ST. W. SIDE (MILTON)	SEPT. 13/63	NO FLOW NOTED						
OW-16.0 W-4	18" Ø STORM SEWER - MAIN ST. N.W. SIDE (MILTON)	AUG. 20/59 AUG. 3/60 SEPT. 8/60 OCT. 4/63	100,000 9,100,000 <15,000 <15,000	30 18 58 6.0	376 612 - 412	48 32 - 3	328 580 - 409		6
OW-16.0 W-5	12" Ø STORM SEWER- MAIN ST. E. SIDE (MILTON)	SEPT. 13/63	FLOW INSUFFICIENT FOR SAMPLING						
OW-16.0 W-6	12" Ø STORM SEWER - MAIN ST. E. SIDE (MILTON)	SEPT. 13/63	NO FLOW NOTED						

TABLE 1 - 10

OUTFALL TABULATION AND ANALYTICAL RESULTS

SAMPLING POINT NO.	LOCATION	DATE EXAMINED	COLIFORMS PER 100 ML		5-DAY	TOTAL	SOLIDS		TURBIDITY
			I.N.	M.F.	B.O.D.		SUSP.	DISS.	
OW-16.0 W-7	8" Ø STORM SEWER - MAIN ST. N.E. SIDE (MILTON)	SEPT. 13/63	NO FLOW NOTED						
OW-16.0 W-8	6" Ø STORM SEWER - MAIN ST. N.E. SIDE (MILTON)	SEPT. 13/63	NO FLOW NOTED						
WEST BRANCH TRIBUTARY "C"									
OWTC-16.0	OAKVILLE CREEK	AUG. 30/60	3,500		4.4	-	-	-	21
	WEST BRANCH	SEPT. 18/60	2,900		-	-	-	-	-
	TRIBUTARY "C"	MAY 31/61	77		1.6	390	-	-	1
	UPSTREAM FROM	JUN. 5/63	3,700		1.3	338	-	-	6.5
	MAIN ST. AND CONFLUENCE WITH WEST BRANCH (MILTON)	OCT. 4/63	1,100		1.5	530	22	508	-
OWTC-16.2 W	18" Ø STORM SEWER OPPOSITE BREWER'S RETAIL STORE (MILTON)	OCT. 4/63	FLOW INSUFFICIENT FOR SAMPLING						
OWTC-16.2 W-2	21" Ø STORM SEWER - OPPOSITE BREWER'S RETAIL STORE (MILTON)	OCT. 4/63	NO FLOW NOTED						
OWTC-16.5 R	4" Ø RELIEF SEWER - WOODWARD AVE. SEWAGE PUMPING STATION (S.P.S.) (MILTON)	OCT. 4/63	NO FLOW NOTED						

TABLE I - II

OUTFALL TABULATION AND ANALYTICAL RESULTS

SAMPLING POINT NO.	LOCATION	DATE EXAMINED	COLIFORMS PER 100 ML		5-DAY B.O.D.	TOTAL	SOLIDS		TURBIDITY
			I.N.	M.F.			SUSP.	DISS.	
OWTC-16.5 R-2	4 1/4" Ø RELIEF SEWER - WOODWARD AVE. S.P.S. (MILTON)	OCT. 4/63			NO FLOW NOTED				
OWTC-16.5 R-3	8" Ø RELIEF SEWER - WOODWARD AVE. S.P.S. (MILTON)	OCT. 4/63			NO FLOW NOTED				
OWTC-16.5 W	6" Ø STORM SEWER - WOODWARD AVE. (MILTON)	OCT. 4/63			NO FLOW NOTED				
OWTC-16.5 W-2	10" STORM SEWER - WOODWARD AVE. (MILTON)	OCT. 4/63			NO FLOW NOTED				
OWTC-16.5 W-3	15" Ø STORM SEWER - WOODWARD AVE. (MILTON)	OCT. 4/63			NO FLOW NOTED				
OWTC-16.5	TRIBUTARY "C" AT WOODWARD AVE (MILTON)	AUG. 3/60		9,100	8	-	-	-	25.
		DEC. 14/61		300	5.0	456	-	-	12.5
		JUN. 5/63		3,700	1.2	364	-	-	2.6
		OCT. 4/63		44	1.6	470	16	454	-
WEST BRANCH TRIBUTARY "C" (2)									
OWTC (2)- 17.0 I	6" Ø ROOF DRAIN - PARK FARM DAIRY (MILTON)	OCT. 4/63			NO FLOW NOTED				

OUTFALL TABULATION AND ANALYTICAL RESULTS

SAMPLING POINT NO.	LOCATION	DATE EXAMINED	COLIFORMS PER 100 ML		5-DAY B.O.D.	SOLIDS		TURBIDITY	
			I.N.	M.F.		TOTAL	SUSP.		DISS.
OWTC- {2} = 17.0 1-2	4" Ø BUILDING SEWER - PARK FARM DAIRY (MILTON)	OCT. 4/63	NOT LOCATED SEWER REPORTEDLY RECEIVES COMPRESSOR COOLING WATER						
OWTC- {2} = 17.0	TRIBUTARY "C" {2} AT BASE LINE ROAD (TWP. OF ESQUESING)	OCT. 4/63	WATERCOURSE DRY						
			<u>WEST BRANCH TRIBUTARY "C"</u>						
OWTC-17.0 R	4" Ø RELIEF SEWER - PARK FARM DAIRY SEWAGE PUMPING STATION (MILTON)	OCT. 4/63	NO FLOW NOTED						
OWTC-17.0	TRIBUTARY "C" AT BASE LINE ROAD (TWP. OF ESQUESING)	OCT. 4/63	154		0.8	936	2	934	
			<u>OAKVILLE CREEK WEST BRANCH</u>						
OW-16.0	OAKVILLE CREEK WEST BRANCH UPSTREAM FROM MAIN ST. AND CONFLUENCE WITH TRIBUTARY "C"	AUG. 3/60 DEC. 14/61 JUN. 5/63 OCT. 4/63	62,00 <10 5,000 410		7.6 5.2 1.2 1.4	- 800 408 420	- 88 - 13	- 712 - 407	22. - 2.0 -
OW-16.0 W-9	21" Ø SEWER REPLACING TERMINAL OF FORMER TAIL - RACE (MILTON)	OCT. 4/63	NO FLOW NOTED						

TABLE 1-13

OUTFALL TABULATION AND ANALYTICAL RESULTS

SAMPLING POINT NO.	LOCATION	DATE EXAMINED	COLIFORMS PER 100 ML		5- DAY	SOLIDS		TURBIDITY	
			<u>I.N.</u>	<u>M.F.</u>	<u>B.O.D.</u>	<u>TOTAL</u>	<u>SUSP.</u>		<u>DISS.</u>
OW-16.0 W-10	12" Ø STORM SEWER - REAR OF SUNOCO SERVICE STATION PREMISES	OCT. 4/63	FLOW INSUFFICIENT FOR SAMPLING						
OW-16.1 W	6" x 6" BOX DRAIN DOWN- STREAM FROM BRIDGE LEADING TO ROBINHOOD FLOUR MILLS SUPERSWEET FEED DIVISION (MILTON)	OCT. 4/63	FLOW INSUFFICIENT FOR SAMPLING						
OW-16.1 P	3" Ø PRIVATE DRAIN - ROBINHOOD FLOUR MILLS (MILTON)	OCT. 4/63	NO FLOW NOTED						
OW-16.1 P-2	5" Ø PRIVATE DRAIN - ROBINHOOD FLOUR MILLS (MILTON)	OCT. 4/63	FLOW INSUFFICIENT FOR SAMPLING						
OW-16.1 P-3	4" Ø PRIVATE DRAIN - ROBINHOOD FLOUR MILLS (MILTON)	OCT. 4/63	FLOW INSUFFICIENT FOR SAMPLING						
OW-16.1 P-4	3" Ø PRIVATE DRAIN - ROBINHOOD FLOUR MILLS (MILTON)	OCT. 4/63	NO FLOW NOTED						

TABLE I - 14

OUTFALL TABULATION AND ANALYTICAL RESULTS

SAMPLING POINT NO.	LOCATION	DATE EXAMINED	COLIFORMS PER 100 ML		5-DAY B.O.D.	TOTAL	SOLIDS		TURBIDITY	PH	IRON AS FE
			I.N.	M.F.			SUSP.	DISS.			
OW-16.1 W-2	8" Ø STORM SEWER - MARTIN ST. (MILTON)	OCT. 4/63			NO FLOW NOTED						
OW-16.1 W-3	36" Ø STORM SEWER - INTERSECTION MARTIN & MILL ST'S. (MILTON)	OCT. 4/63			NO FLOW NOTED						
OW-16.1 W-4	8" Ø STORM SEWER - MARTIN ST. (MILTON)	OCT. 4/63			NO FLOW NOTED						
OW-16.1 W-5	8" Ø STORM SEWER - MARTIN ST. (MILTON)	OCT. 4/63			NO FLOW NOTED						
OW-16.1	OAKVILLE CREEK WEST BRANCH AT MARTIN ST. (MILTON)	AUG. 3/60		410	8	-	-	-	54	7.2	6.6
		DEC. 14/61		190	2.4	464	-	-	21.0		
		JUN. 5/63		70	1.0	336	-	-	10.5		
		OCT. 4/63		130	1.6	440	10	430	-		

TABLE 1 - 15

OUTFALL TABULATION AND ANALYTICAL RESULTS

SAMPLING POINT NO.	LOCATION	DATE EXAMINED	COLIFORMS PER 100 ML		5-DAY B.O.D.	SOLIDS			TURBIDITY	CYANIDE	IRON	COPPER	ALKALINITY	ACIDITY	
			I.N.	M.F.		TOTAL	SUSP.	DISS.		AS HCN	AS FE	AS PH	AS CU	AS CACO3	AS CACO3
OW-16.4	OAKVILLE CREEK	JUL. 29/57	-	-	-	-	-	-	-	-	32.0	7.0	-	-	-
	WEST BRANCH	FEB. 28/58	-	-	2.8	418	24	394	-	0.2	11.6	6.5	0.06	190	10
	AT C.N. TRACKS	DEC. 3/59	-	-	-	1370	94	1276	-	-	80.	7.5	-	124	-
	DOWNSTREAM	DEC. 8/59	-	-	-	458	222	236	-	-	10	6.8	-	-	12
	FROM P.L.	MAR. 3/60	-	-	-	620	56	564	-	-	14.8	7.0	-	-	-
	ROBERTSON	MAY 1/61	-	-	-	310	4	306	-	0	1.48	8.1	-	198	-
	MFG. CO. LTD. WASTE PONDS (MILTON)	OCT. 4/63	-	<100	2.4	616	43	573	-	-	16.0	7.0	-	-	-
OW-16.5	OAKVILLE CREEK WEST BRANCH AT DAM UPSTREAM FROM INLET TO MILL POND (MILTON)	OCT. 4/63	-	106	1.5	358	8	350	-	-	-	-	-	-	-
OW-16.9 I	36" Ø INDUSTRIAL SEWER - ONTARIO STEEL PRODUCTS COMPANY LIMITED DIVISION "D" (MILTON)	MAR. 3/60	-	-	-	41522	1914	39608	-	-	9.0	-	-	-	-
		OCT. 4/63	8	-	4.6	358	2	356	-	0.30	7.5	-	-	240	-
OW-17.0	OAKVILLE CREEK	AUG. 3/60	-	15,000	2.8	-	-	-	8.	-	8.1	-	-	-	-
	WEST BRANCH	DEC. 14/61	-	0	4.1	342	-	-	5.	-	-	-	-	-	-
	AT BRONTE ST. (MILTON)	JUN. 5/63	-	80	1.3	324	-	-	3.6	-	-	-	-	-	-
		OCT. 4/63	-	38	1.6	324	12	312	-	-	-	-	-	-	-

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